

Blowing dust or blowing sand

Dust or sand, raised by the wind to moderate heights above the ground. The horizontal visibility at 2 m above the ground is sensibly reduced.

Blowing snow

An ensemble of snow particles raised by the wind to moderate or great heights above the ground. The horizontal visibility at 2 m above the earth's surface is generally very poor.

Continuous precipitation

Continuous precipitation should be applied to precipitation which has continued without a break during the hour preceding the observation.

Dew

A deposit of water drops on objects at or near the ground, produced by the condensation of water vapour from the surrounding clear air.

Drifting and blowing dust or sand

An ensemble of particles of dust or sand raised, at or near the station, from the ground to small or moderate height by a sufficiently strong and turbulent wind.

Drifting dust or drifting sand

Dust or sand, raised by the wind to small heights above the ground. The visibility is not sensibly diminished at 2 m above the ground.

Drifting snow

An ensemble of snow particles raised by the wind to small heights above the ground. The visibility is not sensibly diminished at 2 m above the earth's surface.

Drizzle

Fairly uniform precipitation composed exclusively of fine drops of water (diameter less than 0.5 mm), very close to one other.

Dust storm or sandstorm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.

Dust whirl or sand whirl

An ensemble of particles of dust or sand, sometimes accompanied by small litter, raised from the ground in the form of a whirling column of varying height with a small diameter and a approximately vertical axis.

Fog

A suspension of very small water droplets in the air, generally reducing the horizontal visibility at the earth's surface to less than 1 km.

Freezing drizzle

Drizzle the drops of which freeze on impact with the ground or with objects on the earth's surface.

Freezing rain

Rain the drops of which freeze on impact with the ground or with objects on the earth's surface.

Glaze

A generally homogeneous and transparent deposit of ice formed by the freezing of supercooled drizzle droplets or raindrops on objects the surface temperature of which is below or slightly above 0°C.

Hail

Precipitation of small balls or pieces of ice (hailstones) with a diameter ranging from 5 to 50 mm or sometimes more, falling either separately or agglomerated into irregular lumps.

Haze

A suspension in the air of extremely small, dry particles invisible to the naked eye and sufficiently numerous to give the air an opalescent appearance.

Hoar frost

A deposit of ice having a crystalline appearance, generally assuming the form of scales, needles, feathers or fans.

Ice fog

A suspension of numerous minute ice crystals in the air, reducing the visibility at the earth's surface.

Ice pellets

Precipitation of transparent or translucent pellets of ice, which are spherical or irregular, rarely conical, and which have a diameter of 5 mm or less.

Ice prisms

A fall of unbranched ice crystals, in the form of needles, column's or plates, often so tiny that they seem to be suspended in the air. These crystals may fall from a cloud or from a cloudless sky.

Intermittent precipitation

During intermittent precipitation, the sky usually remains overcast during the periods when the rain is not falling.

Lightning

A luminous manifestation accompanying a sudden electrical discharge which takes place from or inside a cloud or, less often, from high structures on the ground or from mountains.

Mist

A suspension in the air of microscopic water droplets or wet hygroscopic particles, reducing the visibility at the earth's surface (visibility 1 km or more).

Rain

Precipitation of liquid water particles, either in the form of drops of more than 0,5 mm diameter or of smaller widely scattered drops.

Rime

A deposit of ice, composed of grains more or less separated by trapped air, sometimes adorned with crystalline branches.

Shallow fog

Fog not deeper than about 10 metres at sea.

Showers

Showers are generally associated with detached clouds and periods of partial clearance.

Smoke

A suspension in the air of small particles produced by combustion.

Snow flakes

Precipitation of agglomerated ice crystals, most of which are branched (sometimes star- shaped).

Snow grains

Precipitation of very small white opaque grains of ice. These grains are fairly flat or elongated; their diameter is generally less than 1 mm.

Snow pellets

Precipitation of white and opaque grains of ice. These grains are spherical or sometimes conical; their diameter is about 2 - 5 mm.

Snow

Precipitation of ice crystals, most of which are branched (sometimes star-shaped).

Spout

A phenomenon consisting of an often violent whirlwind, revealed by the presence of a cloud column or inverted cloud cone (funnel cloud), protruding from the base of a Cumulonimbus, and of a "bush" composed of water droplets raised from the surface of the sea or of dust, sand or litter, raised from the ground.

Spray

An ensemble of water droplets torn by the wind from the surface of an extensive body of water, generally from the crests of waves, and carried up a short distance into the air.

Thunder

A sharp or rumbling sound which accompanies lightning.

Thunderstorm

One or more sudden electrical discharges, manifested by a flash of light (lightning) and a sharp or rumbling sound (thunder).

White dew

A deposit of white frozen dew drops.

Marine Observers Handbook

General

For the purposes of the meteorological logbook, the term 'weather' embraces those elements covered by the 'present weather' and 'past weather' codes, i.e., fog, precipitation, etc. (see Met.O.509, *Ships' Code* and *Decode Book*).

For a concise description of weather, Admiral Beaufort devised a system known as the Beaufort notation. Since 1958 this method has not been used to record weather at the synoptic hour, but it is given below as it provides a handy way of amplifying the main synoptic report, or of recording the weather between observations, e.g. duration of precipitation, in the remarks column of the meteorological logbook for research purposes. It may also be found useful in the Deck Logbook and in the plotting of weather bulletins.

The present codes are sufficient to describe the weather for synoptic purposes, and they are also suitable for data processing by computer or by other machine methods.

The Beaufort notation

Weather	Beaufort letter	Weather	Beaufort letter
Blue sky (0-2/8 clouded)	b	Overcast sky (unbroken cloud covering sky)	o
Sky partly clouded (3-5/8)	bc	Squally weather	q
Cloudy (6-8/8 clouded)	c	Rain	r
Drizzle	d	Sleet (rain and snow together)	rs
Wet air (without precipitation)	e	Snow	s
Fog	f	Thunder	t
Gale	g	Thunderstorm with rain	tlr
Hail	h	Thunderstorm with snow	tls
Precipitation in sight of ship or station	jp	Ugly threatening sky	u
Line squall	kq	Unusual visibility	v
Storm of drifting snow	ks	Dew	w
Sandstorm or duststorm	kz	Hoar-frost	x
Lightning	1	Dry air	y
Mist	m	Dust haze	z

The system has been extended since Beaufort's day to provide indication of intensity and continuity. Capital letters are now used to indicate occasions when the phenomenon noted is intense. On the other hand, occasions of slight intensity are distinguished by adding a small suffix 'o'.

Thus R = Heavy rain
r = Moderate rain

r_o = Slight rain

The prefix 'i' indicates 'intermittent', thus:

if = Fog patches.

ir_o = Intermittent slight rain.

The prefix 'p' indicates 'shower of', thus:

pR = Shower of heavy rain.

ps_o = Shower of slight snow.

A solidus '/' is used in 'present weather' to distinguish present conditions from those in the past hour, thus:

c/r_o = Cloudy after slight rain in the past hour.

Continuity is indicated by repeating the letter, thus:

rr = Continuous moderate rain.

The following are further examples of the use of Beaufort notation:

cs_o s_o = Cloudy with continuous slight snow.

oid_o = Overcast with intermittent slight drizzle.

bif = Blue sky with fog patches.

cqprh = Cloudy with squalls and shower of moderate rain and hail.

crrm = Cloudy with continuous moderate rain, and mist.

In past weather the letters are used in the same way but their order from left to right indicates sequence in time. Thus 'b, bc, cpr' indicates cloudless conditions, becoming partly cloudy, followed by cloudy conditions with shower(s) of rain.

Precipitation

Precipitation A distinction is drawn in the present and past weather codes between rain, drizzle and showers. Showers are of short duration and the fair periods between them are characterized by clearances of the sky. Showers fall from clouds having great vertical extent and usually isolated. They do not often last more than half an hour. Showers are characteristic of an unstable polar air mass, usually flowing in the rear of a depression, but they are by no means confined to this situation.

Rain and drizzle fall from overcast or nearly overcast skies. The distinction between rain and drizzle depends not on the amount of the precipitation but on the size of the drops. Drizzle is 'precipitation in which the drops are very small' (diameter less than 0.5 mm). Slight rain, on the other hand, is precipitation in which the drops are of appreciable size (they may even be large drops), but are relatively few in number. Observers should decide from the size of the drops whether the precipitation is drizzle or rain, and from the combined effect of the number and size of the drops whether the precipitation is slight, moderate or heavy. The description 'heavy' is relatively rare in temperate latitudes.

Precipitation is defined as intermittent if it has been discontinuous during the preceding hour, without presenting the character of a shower. Observers should cultivate the practice of recording the times of onset and cessation of precipitation.

Fog, mist and haze

Fog, mist and haze have in the past been used, rather loosely, to describe decreasing degrees of obscurity in the atmosphere. Modern practice reserves the description 'haze' for occasions when the obscurity is caused by solid particles such as dust or sea salt. Fog and mist are akin in that they are both composed of minute water drops and may thus be distinguished from haze. In practice the distinction is usually made by means of the dry-and wet-bulb readings. The following table gives the

approximate criterion for the reporting of mist and haze at various temperatures. Intermediate values may be obtained by interpolation. If the depression of the wet-bulb is more than about that shown in the relevant column B, haze should be reported. If the depression is less, the obscurity should be reported as mist. In the case of the UK Met. Office, a relative humidity of 95 per cent is used as a guide to the dividing line between mist and haze

DEPRESSION OF THE WET BULB CORRESPONDING TO A RELATIVE HUMIDITY OF 95%

Column A	Columns B	Columns B
Dry-Bulb °C	Stevenson screen Depression °C	Aspirated psychrometer Depression °C
40	0.8	0.8
35	0.7	0.7
30	0.7	0.7
25	0.6	0.6
20	0.5	0.6
15	0.5	0.5
10	0.4	0.4
5	0.3	0.3
0	0.3	0.3

The further distinction between mist and fog is only one of degree and is arbitrarily assigned. When the visibility is reduced to less than 1 km or 0.54 n. mile the obscurity is described as fog; when greater than 1 km it is known as mist.